

April 30, 2018

Richard Greenwood

California State Lands Commission

200 OceanGate, 12th floor

Long Beach, CA 90802-4331

Dear Mr. Greenwood,

I am writing in accordance with the California State Lands Commission Geophysical Survey Permit No. 9235, to notify you of proposed survey operations in regards to a Fiber Optic Cable Landing. This survey will be conducted during the timeframe of May 14, 2018 and June 14, 2018 between the hours of 8am and 7pm. Please find the required documentation pertaining to this notification attached. If additional information is required, please don't hesitate to contact our offices.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Mueller", with a stylized flourish at the end.

Michael Mueller

EXHIBIT G

California State Lands Commission Presurvey Notice Requirements for Permittees to Conduct Geophysical Survey Activities

All parts of the Presurvey Notice must be adequately filled out and submitted to the CSLC staff a minimum of twenty-one (21) calendar days prior to the proposed survey date to ensure adequate review and approval time for CSLC staff. Note that one or more of the items may require the Permittee to plan well in advance in order to obtain the necessary documentation prior to the Notice due date (e.g., permits from other State or Federal entities).

Please use the boxes below to verify that all the required documents are included in the Presurvey Notice. If "No" is checked for any item, please provide an explanation in the space provided. If additional space is needed, please attach separate pages.

Yes No

- | | | | |
|-------------------------------------|-------------------------------------|---|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Geophysical Survey Permit Exhibit F | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Survey Location (including a full-sized navigation chart and GPS coordinates for each proposed track line and turning point) | |
| | | Explanation: | _____ |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Permit(s) or Authorization from other Federal or State agencies (if applicable) | |
| | | Explanation: | <u>No other permits required</u> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | 21-Day Written Notice of Survey Operations to Statewide Geophysical Coordinator/ | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | U.S. Coast Guard Local Notice to Mariners/ | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Harbormaster and Dive Shop Notifications | |
| | | Explanation: | <u>See attached</u> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Marine Wildlife Contingency Plan | |
| | | Explanation: | <u>Please see attached</u> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Oil Spill Contingency Plan | |
| | | Explanation: | <u>Please see attached</u> |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Verification of California Air Resources Board's Tier 2-Certified Engine Requirement | |
| | | Explanation: | <u>N/A vessel has a gasoline outboard motor</u> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Verification of Equipment Service and/or Maintenance (must verify sound output) | |
| | | Explanation: | _____ |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Permit(s) or Authorization from California Department of Fish and Wildlife for surveys in or affecting Marine Protected Area(s) (if applicable) | |
| | | Explanation: | <u>Not Applicable</u> |

NOTE: CSLC staff will also require verification that current biological information was obtained and transmitted as outlined in Section 5 of this permit.

EXHIBIT F
PRESURVEY NOTIFICATION FORM

Applicant/Permittee's Mailing Address

eTrac, Inc.
637 Lindaro St. Ste 100
San Rafael, CA 94901

Jurisdiction:

Date: 04/30/18
Federal _____ State _____ Both X
If State: Permit #PRC 9235
Region: _____
Area: _____

GEOPHYSICAL SURVEY PERMIT

Check one: X New survey _____ Time extension of a previous survey

eTrac, Inc. will conduct a geophysical survey offshore California in the survey area outlined on the accompanying navigation chart segment. If you foresee potential interference with commercial fishing or other activities, please contact the person(s) listed below:

FEDERAL WATERS (outside 3 nautical miles)

- 1) Applicant's representative
- 2) Federal representative (e.g., Bureau of Ocean Energy Management [BOEM] or National Science Foundation [NSF])

NOTE: Any comments regarding potential conflicts in Federal waters must be received by the Applicant's Representative and lead Federal agency within ten (10) days of the receipt of this notice.

STATE WATERS (Inside 3 nautical miles)

- 1) Permittee's representative
- 2) CSLC representative

NOTE: Any comments regarding potential conflicts in State waters should be received as soon as possible by the Permittee's representative, no more than fifteen (15) days after the receipt of this notice.

1. Expected Date of Operation 05/14/18 - 06/14/18
 2. Hours of Operation 8AM-7PM
 3. Vessel Name S/V 505, WAM-V Autonomous Vessel
 4. Vessel Official Number CF 2257 TT
 5. Vessel Radio Call Sign Survey Vessel 505
 6. Vessel Captain's Name TBD
 7. Vessel will monitor Radio Channel(s) 13/16
 8. Vessel Navigation System POSMV GNSS
-

9. Equipment to be used Multibeam, Sidescan, Sub-bottom, Magnetometer

- a. Frequency (Hz, kHz) MBES:200-400kHz, SSS:400-600kHz, Sub-Bottom:2-16kHz
- b. Source level (dB re 1 μ Pa at 1 meter (m) [root mean square (rms)]) 221dB re 1 μ Pa at 1m
- c. Number of beams, across track beamwidth, and along track beamwidth 256 (25ms);
- d. Pulse rate and length 40Hz(25ms) | Length=150ns
- e. Rise time -0.05ms, 165 ns
- f. Estimated distances to the 190 dB, 180 dB, and 160 dB re 1 μ Pa (rms) isopleths 5.5m, 8.5m, 20m
- g. Deployment depth 3m to 50m
- h. Tow speed 4knots
- i. Approximate length of cable tow 100m

eTrac's Representative:

Mike Mueller
President
637 Lindero St U
San Rafael, CA 94901
415-515-4416

California State Lands Representative

Richard B. Greenwood
Statewide Geophysical Coordinator
200 Ocean Gate, 12th Floor
Long Beach, CA 90802-4331
(562) 590-5201

BOEM Representative

Joan Barminski
Regional Supervisor
Office of Strategic Resources
770 Paseo Camarillo
Camarillo, CA 93010
(805) 389-7585

Other Federal Representative (if not BOEM):

Pre-Survey Notification Information

Purpose and Objectives

1. Reason for the survey: Fiber Optic Cable Landing
2. Types of data collected: Multibeam, Sidescan, Sub-Bottom Sonars, Magnetometer
3. Layout (including spatial information of survey track lines)
 - a. GPS Coordinates/GIS Files: See Attachment
 - b. Map/chart: See Attachment

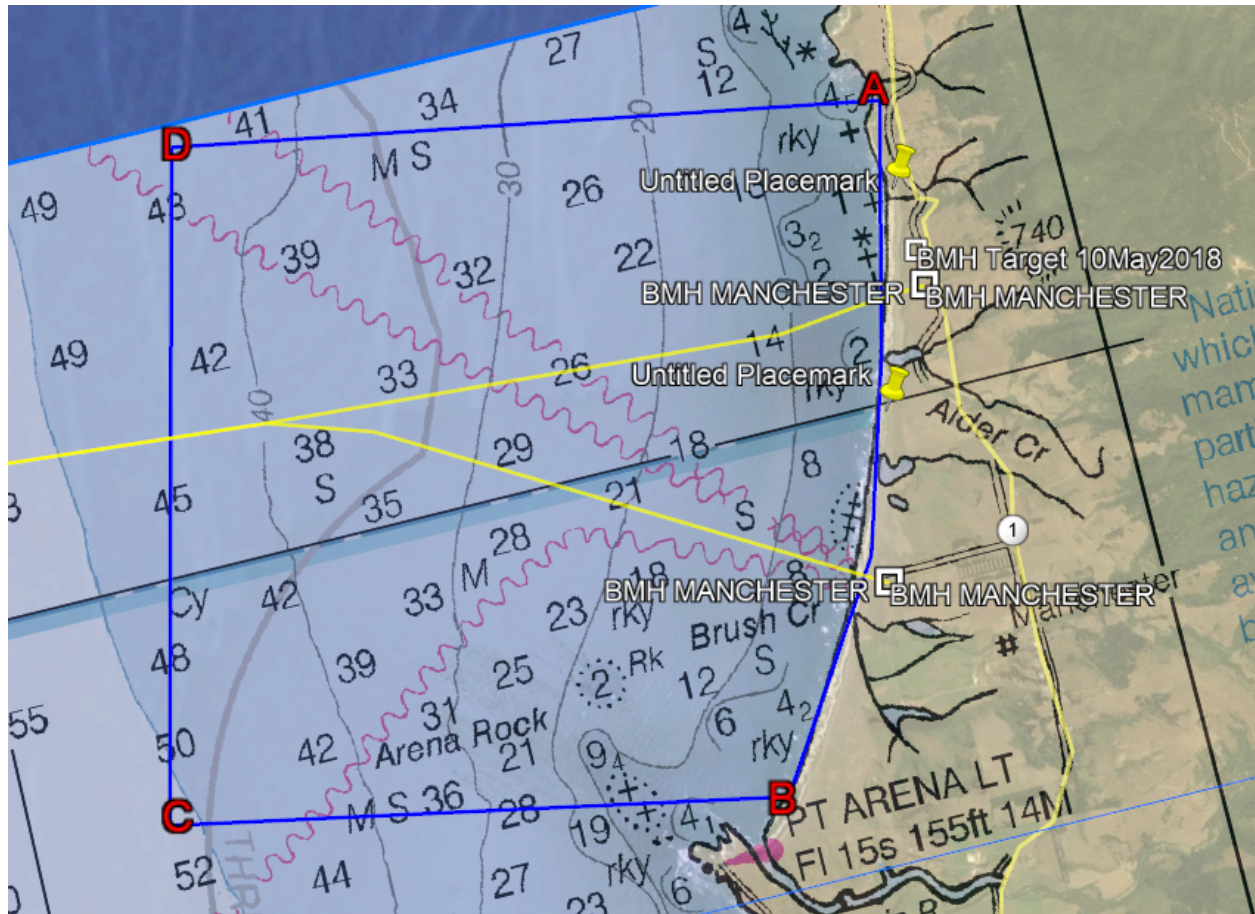
** For Dredge Monitoring and Coastal Structure Surveys, Exhibit F and the questions above must be submitted at least twenty-four (24) hours prior to commencing survey operations, whenever feasible, otherwise as soon as possible.*

For all other surveys, the following documents must also be provided, along with the above questions and Exhibits F & G:

- ☐ Marine Wildlife Monitors Qualifications
- ☐ Potentially Affected Pinniped Haul-Out Sites
- ☐ Nearest Emergency Medical Facility

Area 1 – Manchester, CA

Area 1 is a cable corridor. The corridor is defined as a 1000 meter corridor centered on the planned cable route extending from 3 meters water depth on the shoreward to the 3 nautical mile demarcation line. An additional area 1000m wide centered on the planned cable route 500 meters past the 3.0 nautical mile limit to overlap the pacific crossing survey being conducted to the 3nm state limit. Area detailed below includes a buffer zone to account for updated project instructions.

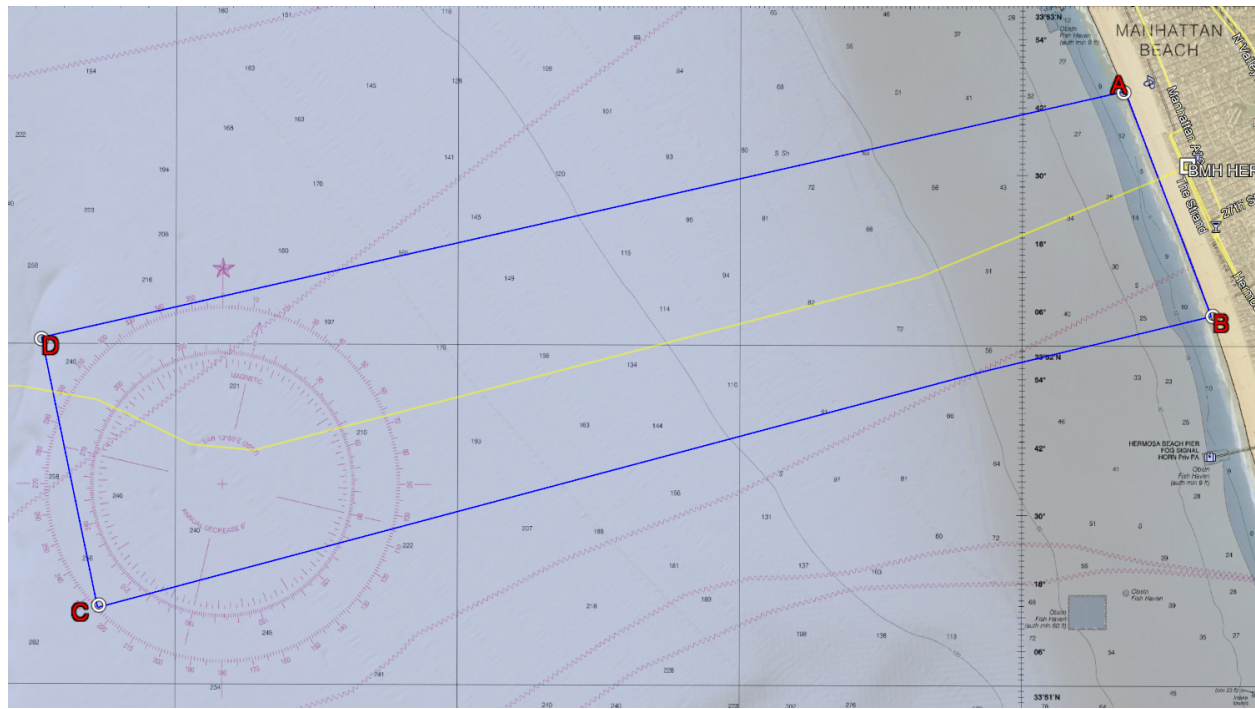


Area 1 is bound by the follow geographic coordinates referenced by **A,B,C,D** in the above graphic:

- A** **39° 2'5.36"N 123°41'24.97"W**
- B** **38°57'36.83"N 123°43'40.89"W**
- C** **38°58'27.66"N 123°48'45.47"W**
- D** **39° 2'51.18"N 123°47'27.39"W**

Area 2 – Hermosa, CA

Area 2 is a cable corridor. The corridor is defined as a 1000 meter corridor centered on the planned cable route extending from 3 meters water depth on the shoreward to the 3 nautical mile demarcation line. An additional area 1000m wide centered on the planned cable route 500 meters past the 3.0 nautical mile limit to overlap the pacific crossing survey being conducted to the 3nm state limit.



Area 2 is bound by the follow geographic coordinates referenced by **A,B,C,D** in the above graphic:

- A** **33°52'44.69"N 118°24'38.47"W**
- B** **33°52'5.24"N 118°24'19.42"W**
- C** **33°51'13.78"N 118°28'16.20"W**
- D** **33°52'0.76"N 118°28'28.56"W**



Juliette G <juliette@etracinc.com>

Public Notice of Survey Operations

Juliette G <juliette@etracinc.com>

Wed, May 2, 2018 at 3:05 PM

To: boating@bh.lacounty.gov, info@sonomacoastdivers.com, D11LNM@uscg.mil, dive@scubadivela.com, aristakat02@yahoo.com, noyohd@yahoo.com, webmaster@subsurfaceprogression.com

Cc: Michael Mueller <mike@etracinc.com>, David Neff <dave@etracinc.com>

To whom it may concern:

Attached is the Pre-Survey Notification Packet for a bathymetric survey scheduled to be conducted by eTrac, Inc. during the period of 5/14/18-6/14/18. This is for informational purposes only - NO ACTION IS REQUIRED.

The survey personnel and equipment spread will consist of a commercial survey boat approximately 30 feet in length, a marine surveyor/technicians/environmental monitor, and a 3D multi-beam sonar system, and commercial grade differential GPS with sub-meter accuracy or better. Please note, that the frequencies of this survey will be outside the range of concern for divers, marine wildlife and pinnipeds.

If you have any questions pertaining to this project please feel free to contact our offices.

Thank you,

--

Juliette Goyhenetche-Gibson

eTrac, Inc.

juliette@etracinc.com

707-280-3245



Cable Landings - SLC Public Notification Package.pdf

2993K

Appendix B: eTrac, Inc. Equipment List

Equipment	Dominant Frequency Range	Deployment Method
Single Beam		
Odom CV300	200 kHz	Vessel Mounted
Odom CV300	200 kHz	Vessel Mounted
Multi Beam		
R2Sonic 2020	200-700 kHz	Vessel Mounted
R2Sonic 2022	200-700 kHz	Vessel Mounted
R2Sonic 2024	200-700 kHz	Vessel Mounted
R2Sonic 2026	200-700 kHz	Vessel Mounted
Multi Beam		
Benthos SSS	200 kHz	Tow-Behind
Edgetech 4200	400-900 kHz	Tow-Behind

** At this time, eTrac does not own subbottom profilers or boomers at this time.*



Emergency Action Plan

Project Specific Information

Project Name: 2018 Fiber Optic Cable Landings

Client: Marine Advanced Research

Points of Contact:

Client Contacts

Name***			Title
E-Mail		Office	Cell
Name			Title
E-Mail		Office	Cell
Name			Title
E-Mail		Office	Cell
Name			Title
E-Mail		Office	Cell

eTrac Contacts

Name***	Mike Mueller	President	Title
E-Mail	mike@etracinc.com	Office 415-515-4416	Cell
Name	David Neff	VP of Survey	Title
E-Mail	david@etracinc.com	Office 415-517-0020	Cell
Name			Title
E-Mail		Office	Cell
Name			Title
E-Mail		Office	Cell

****** Primary Emergency Contact. In the event of an emergency, this person will relay information to relevant parties as needed.***

Project Notes:

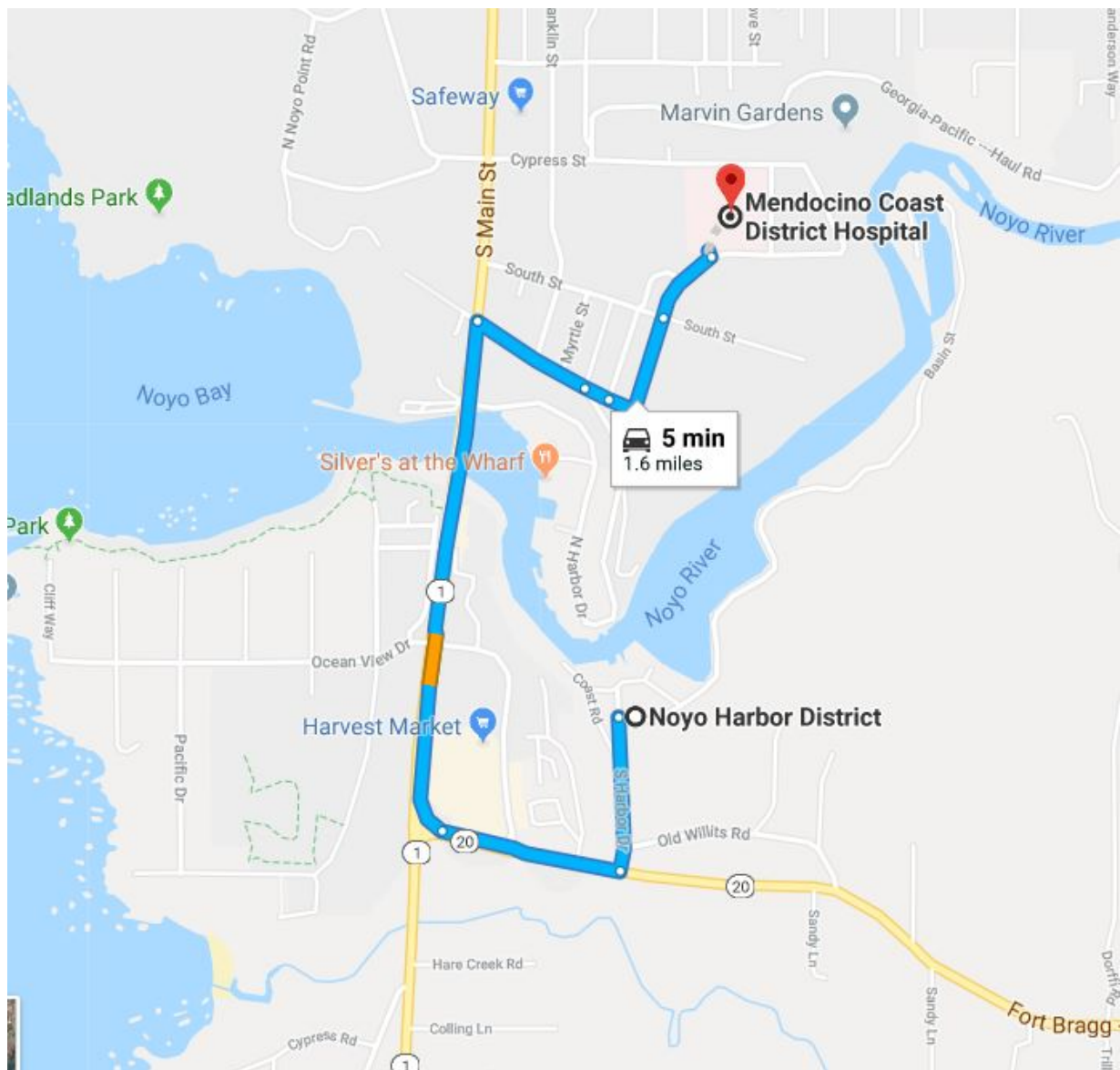
Emergency Contact Information

In the event of an emergency, once the immediate danger has passed, site personnel will notify the Project Manager and complete any incident documentation necessary.

Police / Fire / Ambulance	911
US Coast Guard 1. Clearly say: "MAYDAY MAYDAY MAYDAY" 2. Also give: - Vessel name and/or description - Position and/or location - Nature of emergency - Number of people on board 3. Wait for 10 seconds - if NO response repeat call.	VHF-FM Channel 16
U.S. Coast Guard Rescue Coordination Center – Alameda, CA	510-437-3700
U.S. Coast Guard Rescue Coordination Center – Seattle, WA	206-220-7001
U.S. Coast Guard Rescue Coordination Center –Juneau, AK	907-463-2000
Vessel Assist – VHF Radio Hail 1. Clearly say: "VESSEL ASSIST, VESSEL ASSIST, This is [Boat's Name] hailing TowBoatUS" 2. Wait 2 minutes, if there is no response, try again.	VHF-FM Channel 16
BoatUS - National Dispatch	800-391-4869

Closest Emergency Services:

Hospital - Emergency Room		Hospital – Trauma Center	
Name	Mendocino Coast Hospital	Name	UKIAH VALLEY MEDICAL CENTER
Address	700 River Drive Fort Bragg, CA 95437	Address	275 Hospital Dr Ukiah, CA 95482
Phone	707-961-1234	Phone	707-462-3111



Emergency Procedures

Medical

Worker Illness

6. If the person is mobile, help them move to a sheltered location.
7. If the person is conscious, ask them to describe what they are feeling, so this information can be relayed to Emergency Responders as needed.
8. If needed, contact emergency services, and if available, send someone to guide the Emergency Responders to the location of the individual.
9. If a trained and qualified individual is present, administer First Aid, as needed.
10. Contact project management immediately, and complete any documentation needed.

Worker Injury

7. Ensure that the source of the injury has been eliminated (cutting power supplies, turning off equipment, etc.).
8. Once the immediate danger has been eliminated, assess the extent of injuries.
9. If needed, contact emergency services, and if available, send someone to guide the Emergency Responders to the location of the incident.
10. If there is no immediate danger, DO NOT move the injured person.
11. If a trained and qualified individual is present, administer First Aid, as needed.
12. Contact project management immediately, and complete any documentation needed.

Equipment Failure / Property Damage

6. Ensure that the source of the damage has been eliminated (cutting power supplies, turning off equipment, etc.).
7. Once the immediate danger has been eliminated, assess the extent of damages, and ensure that everyone is unharmed.
8. If there are injured individuals, refer to the steps indicated under “Worker Injury”
9. If the damage results in an ongoing hazard, such as electrical damage, potential for capsizing or sinking, etc. proceed to the nearest safe location for further action.
10. Once the immediate dangers have been addressed, contact project management immediately, and complete any documentation needed.

Emergency Procedures

Fire

When fire is discovered:

5. Activate the nearest fire alarm and/or notify all site personnel about the fire emergency by voice, radio, or other available means.

Fight the fire ONLY if:

6. The fire is small and is not spreading to other areas.
7. Escaping the area is possible by backing up to the nearest exit.
8. The fire extinguisher is in working condition and personnel are trained to use it.

If the fire is too large to be extinguished, employees must:

Vessel Fire

6. If the fire is in the engine room or other enclosure, shut down motors, turn off fuel, and close all vents.
7. If possible, send radio signal before power loss. Coast Guard VHF Channel 16
8. Do not open spaces from a position that could expose you to a rush of flames.
9. If safe to do so, remove flammables to outer deck to reduce hazards.
10. Prepare for evacuation (PFD's, water activated survival lights, etc.)

Building Fire

8. Notify the local Fire Department by calling **911**
9. Leave the building using the designated escape routes.
10. Assemble in the designated area: _____
11. Remain outside until the location is deemed safe to reenter.

Designated employees or supervisors must:

12. Disconnect utilities and equipment unless doing so jeopardizes their safety.
13. Perform an accurate head count of personnel reported to the designated area.
14. Notify Emergency Responders of any missing personnel and necessary information about the facility



Marine Wildlife Contingency Plan

This Marine Wildlife Contingency Plan (MWCP) is designed to act as a general guide for all geophysical survey operations conducted at eTrac, Inc. It is intended to provide guidance to all crew members and field personnel to minimize or avoid any interaction with marine wildlife that may occur during geophysical surveys. Project specific information required for the Pre-Survey Notification package is located in the appendices of this document.

Prior to the commencement of any project all crew members will review the MWCP and ensure they are familiar with all practices and procedures.

Safe Work Practices

1. Marine Wildlife Monitors (MWMs)

- a. Onboard MWMs will notify the vessel operator if a marine mammal or reptile is observed in the path of the transiting vessel. In response, the vessel operator will slow the vessel and/or change course to avoid contact with the animal, unless those actions would jeopardize the safety of the vessel or crew.
- b. Based on the type of survey, one or two MWMs are required:

Frequencies	MWMs Required
<200kHz	Two
>200kHz	One*
Passive	One* **

** This role can be fulfilled by a crew member. In order to do this, eTrac must petition to CSLC staff why a dedicated MWM (non-crew member) cannot be aboard the survey vessel, and how the crew member is qualified to observe for marine wildlife (included in resume).*

*** The operation of passive equipment does not fall under the program and therefore a permit is not required.*

- c. For surveys operating equipment at frequencies <200 kHz, MWMs are responsible for monitoring that all activities are maintaining at least the Safety Zone radius as outlined in the table below:

Equipment Type	Safety Zone (radius)
Single Beam Echosounder	50m
Multibeam Echosounder	500m
Side-Scan Sonar	600m
Subbottom Profiler	100m
Boomer	100m

If calculations/modeling shows that the equipment eTrac uses has a larger safety zone, then the larger safety zone will be observed. If a safety zone is required, the MWM(s) have the authority to stop all survey operations, including shutting off **all equipment**, if a marine mammal or reptile is observed within the specified safety zone. The shutdown will continue until the animal is sighted outside the safety zone or has not been observed for 15 minutes.

- d. If an animal's actions are observed to be irregular, MWMs have the authority to recommend that the equipment be shut down until the animal moves further away from the sound source.
- e. In addition to marine mammals and reptiles, MWMs will observe the area around the survey vessel for seabird activity and have the authority to stop or delay survey operations if unusual densities of diving birds/seabirds are identified.
- f. MWMs have the authority to recommend cessation (or continuation) of operations during periods of limited visibility (e.g., fog, rain) based on the observed abundance of marine wildlife and their ability to view the safety zone (if a safety zone is required). Periodic reevaluation of weather conditions and reassessment of the continuation/cessation recommendation shall be completed by the MWMs.
- g. Once the dates for a survey have been confirmed, a member of the crew will contact the NOAA Long Beach office staff and local whale watching operations to acquire information on the current composition and relative abundance of marine wildlife offshore and convey this information to the MWMs prior to commencement of survey activities. This will provide near real time information for those onboard the survey vessel about the spatial distribution of marine wildlife in the survey region.
- h. Recordkeeping – At a minimum, MWMs are responsible for recording the following information, using the “Data Collection Guidelines for Marine Wildlife Monitors” provided by CSLC staff:
 - i. Descriptions of any encounters with marine mammals, reptiles, and/or unusual concentrations of diving birds/seabirds and the outcome of those encounters
 - ii. The number of times equipment shut-downs or vessel slow-downs were ordered due to animals being observed in the safety zone or due to poor visibility conditions
 - iii. When surveying near haul-out sites, a summary of observations of pinniped behavior at haul-out sites, and any recommendations made related to pinniped avoidance
 - iv. The number of collision events, if applicable, and the species and disposition of animal
 - v. Any additional information relevant or necessary for compliance with the post-survey reporting requirement identified in the General Permit
- i. Qualifications are to be submitted with the Pre-Survey Notification packet located in **Appendix A.**

2. Marine Mammal and Reptile Collision Response and Reporting

If a collision with an animal occurs, the vessel operator must document the following information:

- a. Name of vessel, vessel owner/operator, and captain officer in charge of the vessel at time of collision
- b. Vessel location (latitude, longitude) when the collision occurred
- c. Date and time of collision
- d. Speed and heading of the vessel at the time of collision
- e. Observation conditions (e.g., wind speed and direction, swell height, visibility in miles or kilometers, and presence of rain or fog) at the time of collision
- f. Species of marine wildlife contacted (if known)
- g. Whether an observer was monitoring marine wildlife at the time of collision

After a collision, the vessel must stop, if safe to do so; however, the vessel is not obligated to stand by and may proceed after confirming that it will not further damage the animal by doing so. The vessel will then immediately communicate by radio or telephone all details to the vessel's base of operations, and will immediately report the incident. Consistent with Marine Mammal Protection Act requirements, the vessel's base of operations or, if an onboard telephone is available, the vessel captain will immediately call the National Oceanic and Atmospheric Administration (NOAA) Stranding Coordinator to report the collision and follow any subsequent instructions.

From the report, the Stranding Coordinator will coordinate subsequent action, including enlisting the aid of marine mammal rescue organizations, if appropriate. From the vessel's base of operations, a telephone call will be placed to the Stranding Coordinator, NOAA National Marine Fisheries Service, Southwest Region, Long Beach, to obtain instructions. Although NOAA has primary responsibility for marine mammals in both State and Federal waters, The California Department of Fish and Wildlife will also be advised that an incident has occurred in State waters affecting a protected species. Reports should be communicated to the agencies listed below:

<u>Federal</u>	<u>State</u>
Southwest Region National Marine Fisheries Service Long Beach, CA (562) 980-4017	Enforcement Dispatch Desk California Department of Fish and Wildlife Long Beach, CA (562) 598-1032
	California State Lands Commission Division of Environmental Planning and Management Sacramento, CA (916) 574-0748 slc.ogpp@slc.ca.gov

3. Operating Procedures

- a. Soft Start - For all surveys using active geophysical equipment, a soft start technique is required at the beginning of survey activities each day or following a shut-down

to allow any marine mammal that may be in the immediate area to leave before the sound sources reach full energy. Operators are required to initiate each piece of equipment at the lowest practical sound level, increasing output in such a manner as to increase in steps not exceeding approximately 6 dBs per 5-minute period. Thirty minutes prior to ramp-up operations, the MWM(s) will begin to visually monitor the safety zone and surrounding area for marine wildlife; if a marine mammal or reptile is sighted within or about to enter the safety zone during ramp-up, a shut-down or power-down must be implemented as though the equipment was operating at full power. Initiation of ramp-up procedures from shut-down requires that the MWM(s) be able to visually observe the full safety zone.

- a. Vessel Transiting - When whales or other cetaceans (i.e., dolphins) are observed, the operator of the survey vessel will observe the following guidelines to reduce the potential for collision or disruption during vessel transit and survey operations:
 - i. Maintain a minimum distance of 100 yards
 - ii. Do not cross directly in front of or across their path
 - iii. Transit parallel to and at an equal or slower speed
 - iv. Avoid positioning in such a way to separate female from their calf(ves)
 - v. Do not use the vessel to herd or drive the animals
 - vi. If an animal engages in evasive or defensive action, slow the vessel and move away from the area until the animal calms or moves out of the area
- b. eTrac shall follow, to the maximum extent possible, the guidelines of Zykov (2013) as they pertain to the use of subbottom profilers and sidescan sonar, including:
 - i. Using the highest frequency band possible for the subbottom profiler;
 - ii. Using the shortest possible pulse length; and
 - iii. Lowering the pulse rate (pings per second) as much as feasible.

eTrac will consider the potential applicability of these measures to other equipment types (e.g., boomer). And will conduct routine inspection and maintenance of acoustic-generating equipment to ensure that low energy geophysical equipment used during permitted survey activities remains in proper working order and within manufacturer's equipment specifications. Verification of the date and occurrence of such equipment inspection and maintenance will be provided in the required pre-survey notification to CSLC.

5. Marine Protected Areas & Sanctuaries and Pinniped Haul-out Sites

- a. If a survey is planned for locations that may cross or affect Marine Protected Areas (MPAs) or National Marine Sanctuaries, eTrac, Inc. will coordinate with the California State Land Commission (CSLC), California Department of Fish and Wildlife (CDFW), and any other appropriate permitting agency. If deemed necessary by CDFW, eTrac, Inc. will pursue a Scientific Collecting Permit (SCP), or other appropriate authorization, to secure approval to work within a MPA, and provide a copy of such authorization to the CSLC as part of the Pre-Survey Notification Requirements.

- b. Consistent with National Marine Fisheries Service (NMFS) guidelines, no survey vessels will approach within 91m of a haul-out site.
 - c. Survey activity close to haul-out sites shall be conducted in an expedited manner to minimize the potential for disturbance of pinnipeds on land.
- 6. Equipment – See **Appendix B** for more details
 - a. All electronics are marine rated
 - b. All cables are wet-mateable connectors with safeguards in place to avoid shorts/electricity into the water column
 - c. Cables are checked for nicks/kinks prior to mobilization and after demobilization
 - d. Continuity tests are done when system issues are detected immediately and equipment is removed from wet environment immediately



Spill Contingency Plan

The best defense for spill containment is prevention. eTrac is dedicated to establishing safe and functional work practices that eliminate or greatly reduce the risk of a contaminant spill of any size. This plan is designed to offer guidance and the necessary contact information in the event of a spill. Prior to launching the vessel for any activity, the entire crew must review this Plan and ensure all members understand the procedures to be implemented in the event of a spill, the location of all containment equipment and that all contact information is current.

Safe Work Practices

1. Vessel fueling shall only occur at an approved docking facility. No cross vessel fueling shall be allowed.

Containment Equipment and Procedures

Each vessel is equipped with a containment/clean up kit rated for 5 gallons of oil-based material. In the event of a hull breach, the potential spill would be beyond the scope of the crew's clean up capabilities and emergency services would be contacted immediately. In the event of an internal breach, the crew would contain the spill and disable all bilge pumps until they reached a site with adequate clean-up capabilities. Prior to launch, all containment equipment must be inspected and the storage location conveyed to all crew members.

Each kit includes (at least):

1. Gloves - 1 pair
2. Water-resistant sock booms - 2
3. Absorbent pads - 15
4. Disposal bags with fasteners - 2

In the event of a spill, the following steps must be taken:

1. Assess the immediate risks to personnel. The first priority is to ensure the safety of all crew members. If crew is uninjured and can safely contain and clean up the spill, proceed; otherwise attend to the injured and/or evacuate the area and contact emergency services (listed below).

ONLY if it is safe to do so;

2. Extinguish any sources of heat or flame and shut off all equipment/pumps.
3. Stop the spill at its source by covering holes, closing valves or clamping hoses.

4. Use sock booms and/or granular absorbent (if available) to prevent the spill from entering the water or to contain it in the water, then use absorbent pads to soak up the contaminant and place all soiled items in a disposal bag.
5. If the spill cannot be contained and cleaned up immediately, contact emergency services as soon as possible:

Parker Diving Service	Patriot Environmental Services
Sausalito, CA	(800) 624-9136
(415) 331-0329	
(800) 464-3010	MSRC
	(800) 645-7745
Ocean Blue Environmental	
Services, Inc	NRC
Long Beach, CA	(800) 337-7455
(562) 624-4120	
(800) 990-9930	

5. Immediately following the confirmation that all personnel are safe and the spill has been contained and/or cleaned up to the best of their ability, the captain or a designated crew member must notify the appropriate parties (the same day)

- a. The following information will be conveyed:
 - i. Name and contact information of the caller
 - ii. Location, date and time of the spill
 - iii. Material(s) spilled and estimated quantities
 - iv. Threatened wildlife, if any
 - v. Source of the spill, if known
 - vi. Containment and clean-up actions taken

- b. The following parties will be notified:

eTrac

Project Manager: _____
 Erik Mueller 1-415-847-4786

State Agencies

California Office of Emergency Services (OES)	1-800-852-7550
West Coast Oil Spill hot-line	1-800-OILS-911
U.S. Coast Guard National Response Center	1-800-424-8802

Wildlife Rescue / Response Organizations

Oiled Wildlife Care Network	1-877-UCD-OWCN
Animal Advocates	1-323-651-1336
California Wildlife Center	1-818-222-2658

- c. After taking the necessary actions, the spill will be reported in writing to the Governor's Office of Emergency Services on their forms.

David R. Neff, C.H.

Email: david@etracinc.com

EXPERIENCE

V.P of Survey, 11/2007- present. eTrac, Inc. (Bay Area, CA)

Responsibilities:

- Plan, implement and oversee small to large-scale projects.
- Collect, process and generate products for hydrographic data sets.
- Manage and maintain small fleet of work vessels.
- Develop and implement new technology in survey operations

Hydrographer, Project Manager, 05/2006- 10/2007. David Evans and Associates, Inc. (Portland, OR)

Responsibilities:

- Plan, implement and oversee small and large-scale projects.
- Collect, process and generate products for hydrographic data sets.
- Train field and office personnel in acquisition and processing methods.

Assistant Project Engineer 01/2006- 05/2006. Great Lakes Dredge & Dock Co. (Oak Brook, IL)

Responsibilities:

- Trained and managed the field engineering staff
- Presentations and relations with Army Corps of Engineers

Field Engineer, 05/2005- 12/2005. Great Lakes Dredge & Dock Co. (Oak Brook, IL)

Responsibilities:

- Managed dredging crew
- Surveyed channel and disposal areas
- Analyzed daily production

EDUCATION

B.S., Ocean Engineering, University of Rhode Island, Kingston, RI (May 2003)

PROFESSIONAL AFFILIATIONS/CERTIFICATIONS

American Congress on Surveying and Mapping (ASCM) Certified Hydrographer - #275

Certified Open-Water Diver, Scuba Diving International 2002

Marine Technology Society (MTS) Member 2003

Hazardous Waste Operations and Emergency Response Level II Certification, 2008

OpQual Abnormal Operating Conditions Certification, 2008

First-Aid/CPR/AED Certified

RELEVANT TRAINING/SKILLS

Hardware: MultiBeam Sonar's, SingleBeam Sonar's, Fathometers, Motion Reference Systems, GPS positioning systems (DGPS, RTK), Tidal Gauges, Sound Velocity Probes (Digibar, Seabird, Applied Microsystems)

Software: MS Office, Hypack, Hysweep, Qinsy, AutoCAD, SolidWorks, ArcGIS, Caris, Triton Isis, VBA Scripting

Maritime Skills: Small vessel operation, knowledge of maritime laws of travel, navigation
Hydrographic Surveys Division's (HSD) Operations Branch – Marine Wildlife Monitor, Trained Observer



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Coast Survey
Silver Spring, Maryland 20910-3282

July 30, 2015

David Neff
eTrac, Inc.
637 Lindero Street, Suite 100
San Rafael, CA 94901

Dear Mr. Neff,

The 2015 Hydrographic Surveys Specifications and Deliverables (HSSD) outlines environmental compliance requirements while conducting hydrographic operations (Section 7.6). These requirements will assist the Office of Coast Survey's efforts to comply with the Endangered Species Act and Marine Mammal Protection Act. The purpose of this memorandum is to , Suite 100 reporting marine mammal sightings, and

- the presence of "trained observers" aboard all vessels.

Reporting Sightings

Sightings shall be reported using the enclosed Marine Mammal Sighting Form 11US or the AMVERSEAS interface. As stated in the HSSD, these forms are to be compiled on a project basis and transmitted to pop.information@noaa.gov.

A separate spreadsheet (also enclosed) shall be used to record sea turtle sightings. Those should be and transmitted to either larisa.avens@noaa.gov (East Coast), jeffrey.seminoff@noaa.gov (West Coast), or george.balazs@noaa.gov (Hawaii and Pacific Islands).

Trained Observers

The Hydrographic Surveys Division's (HSD) Operations Branch will be shipping a short video, produced by the Navy, regarding Marine Species Awareness Training. This video is endorsed by the National Marine Fisheries Service's (NMFS) Office of Protected Resources, and is required viewing for all personnel engaged in survey operations and likely to make an observation (e.g. all officers, deck and survey personnel). The viewing of this video is considered sufficient for the purposes of declaring a crew member a "trained observer". Each field unit shall keep a record of personnel that have completed viewing the video and are considered a trained observer. The video is also available online: <https://www.youtube.com/watch?v=KKo3r1yVBBA>

The observation of marine mammals should be conducted in conjunction with both ship and small boat operations.

Sincerely,

Captain Eric W. Berkowitz, NOAA
Chief, Hydrographic Surveys Division

enclosures



Lisa Diamond

Email: lisa@etracinc.com

EDUCATION

B.S., Marine Biology, College of Charleston, Charleston, SC (May 2015).

Related Coursework: Marine Geology Research, Fundamentals of Side Scan Sonar Introduction to Seafloor Mapping, Introduction to Coastal & Marine Geology, Oceanography, Environmental Geology, Biology of Fishes, Biology of Invertebrates, General Ecology

EXPERIENCE

Hydrographer, 05/15 - present. eTrac, Inc. (Bay Area, CA)

Responsibilities:

- Mobilize/Demobilize Survey Vessels
- Collect and Process, and Generate Products for Survey Data
- Plan and Implement Small Scale Projects
- NOAA Project 200nm project area offshore in Texas; Data Processing Specialist/ Survey Tech
- Managed and Processed Final Products from NOAA Task Orders

College of Charleston BEAMs Cruise, 2015

- Operate Survey Equipment and Process Online

Intern for the Sea Turtle Rescue Program, 12/11 – 5/15. South Carolina Aquarium. Responsibilities:

- Trained and assisted volunteers for the Sea Turtle Hospital, Husbandry, and Education departments
- Served as a representative for educational outreach programs
- Designed and built educational props
- Assisted with medical procedures
- Recorded behavioral and medical notes of organisms
- Conducted tank maintenance
- Led public and private tours for the Sea Turtle Hospital facility

PROFESSIONAL AFFILIATIONS/CERTIFICATIONS

OSHA 10 Hour Construction, 2016

Hypack Certified Hydrographer, 12/15

First-Aid/CPR/AED Certified, 03/18

TWIC Certification, Expires 01/21

RELEVANT TRAINING/SKILLS

Hardware: MultiBeam Sonar's, SingleBeam Sonar's, Side Scan Sonar's, Subbottom Profiler's, Motion Reference Systems, GPS positioning systems (DGPS, RTK), Tidal Gauges, Sound Velocity Probes (Digibar, Applied Microsystems)

Software: MS Office, Hypack, Qinsy, AutoCAD, ArcGIS, Caris, POSPac

Maritime Skills: Small vessel operation, knowledge of maritime laws of travel, navigation, knowledge of maritime safety

Hydrographic Surveys Division's (HSD) Operations Branch – Marine Wildlife Monitor, Trained Observer

Power Output and use for the Edgetech SBP system

The actual power of the acoustic pulse that is projected into the water is not displayed to the user in the software.

There is only a percentage of power that is shown to the user.

We operated the sonar at between 40% and 90% of full power as I understand it.

The system specifications call out a power rating of the sonar system but it depends on the type of sonar transducer used (we employed the 216 system which is the middle-of-the road sonar when it comes to power and frequency - the 424 is slightly smaller/lighter, higher frequency and lower power and the 216 is the larger unit with higher weight/size, lower frequency and higher power.) As I read the manual's specifications it only lists a theoretical maximum # of decibels that the top-side unit can create. This may be an over-stated value when it comes to the actual # of decibels that are transmitted into the water column.

The power is applied to the water column in a "chirped" manner. This focuses the sound downwards in a narrow cone towards the seabed.

1.2.6 Gaussian Shaped Amplitude Spectrum Outgoing Pulse Another important feature of Full Spectrum chirp technology is that the signal processing optimizes the performance of the system. The sonar contains many components, each with a unique dynamic range and linearity characteristic which are frequency dependent. In addition to this characteristic, the amplitude spectrum of the outgoing pulse is chosen to be approximately Gaussian in shape to limit the side lobe level and temporal resolution losses due to attenuation. As a wavelet with a Gaussian shaped spectrum is attenuated by the sediment, energy is lost but its bandwidth is nearly preserved. Therefore even after being attenuated by sand, the acoustic pulse has approximately the same resolution as an unattenuated pulse.

1.2.7 Reduction of Side Lobes Use of Full Spectrum chirp technology reduces the side lobes in the effective transducer aperture. The wide bandwidth of the sweep frequency has the effect of smearing the side lobes of the transducer and thus achieving a beam pattern with virtually no side lobes. The effective spatial beam width obtained after processing a full spectrum 2–10 kHz signal, for example is 20 degrees measured at the -3db points.

1.2.7 Reduction of Side Lobes Use of Full Spectrum chirp technology reduces the side lobes in the effective transducer aperture. The wide bandwidth of the sweep frequency has the effect of smearing the side lobes of the transducer and thus achieving a beam pattern with virtually no side lobes. The effective spatial beam width obtained after processing a full spectrum 2–10 kHz signal, for example is 20 degrees measured at the -3db points

Specifications regarding the power amplifier in the manual is included below.

Sampling rate:	20, 25, 40, or 50 kHz, depending on the transmit upper frequency
Acoustic power:	212 dB re 1 μ Pa @ 1 meter peak (approx), at center frequency
Input voltage:	120–220 VAC, 50/60 Hz, auto sense

SB-424, SB-216S and SB-512i Tow Vehicles 2-3

2.1.3 Power Amplifier

The specifications for the Power Amplifier are shown in Table 2-3.

Table 2-3: Power Amplifier Specifications

Number of channels:	2
Gain:	33 dB/channel
Output power:	2000 W peak
Input voltage:	120–220 VAC, 50/60 Hz, manually selectable

2.2 SB-424, SB-216S and SB-512i Tow Vehicles

The general specifications for the SB-424, SB-216S and SB-512i Tow Vehicles are shown in Table 2-4.

Table 2-4: Tow Vehicle Specifications






SB-424

SB-216S

SB-512i

Frequency range:	4–24 kHz	2–16 kHz	0.5–12 kHz
Pulse type:	FM	FM	FM & WB (wide band)
Pulse bandwidth/pulse length:	4–24 kHz/10 ms 4–20 kHz/10 ms 4–16 kHz/10 ms	2–15 kHz/20 ms 2–12 kHz/20 ms 2–10 kHz/20 ms	0.5–8.0 kHz/5 ms FM 0.5–2.7 kHz/40 ms WB 0.5–6.0 kHz/20 ms WB 0.5–4.5 kHz/50 ms FM 0.5–6.0 kHz/9 ms FM 0.5–6.0 kHz/18 ms FM 0.5–7.2 kHz/30 ms FM 0.7–12.0 kHz/20 ms FM 2.0–12.0 kHz/20 ms FM
Calibration:	Gaussian shaped pulse spectrum	Gaussian shaped pulse spectrum	Gaussian and rectangular shaped pulse spectrum
Vertical resolution: ^a	4 cm (4–24 kHz) 6 cm (4–20 kHz) 8 cm (4–16 kHz)	6 cm (2–15 kHz) 8 cm (2–12 kHz) 10 cm (2–10 kHz)	19 cm (1–5.0 kHz) 12 cm (1.5–7.5 kHz) 8 cm (2–12 kHz)
Penetration in coarse and calcareous sand: ^b	2 m (typ)	6 m (typ)	30 m (typ)

Table 2-4: Tow Vehicle Specifications (Continued)

			
	SB-424	SB-216S	SB-512i
Penetration in soft clay: ^b	40 m	80 m	250 m
Beam width: ^c	16°, 4–24 kHz 19°, 4–20 kHz 23°, 4–16 kHz	17°, 2–15 kHz 20°, 2–12 kHz 24°, 2–10 kHz	41°, 0.5–5 kHz 32°, 1–6 kHz 24°, 1.5–7.5 kHz 16°, 2–12 kHz
Optimum tow vehicle pitch/roll:	<7°, 4–24 kHz <8°, 4–20 kHz <10°, 4–16 kHz	<7°, 2–15 kHz <8°, 2–12 kHz <10°, 2–10 kHz	<16°, 0.5–5 kHz <13°, 1–6 kHz <10°, 2–8 kHz <8°, 2–10 kHz <7°, 2–12 kHz
Optimum tow height:	3–5 m above sea floor	3–5 m above sea floor	3–5 m above sea floor
Transmitters:	1	1	2
Receive arrays:	2	2	4
Output power:	2000 W	2000 W	2000 W
Tow vehicle size:	77 cm (30 in.) L 50 cm (20 in.) W 34 cm (13 in.) H	105 cm (41 in.) L 67 cm (26 in.) W 46 cm (18 in.) H	158 cm (62 in.) L 134 cm (53 in.) W 46 cm (18 in.) H
Shipping container size:	91 cm (36 in.) L 66 cm (26 in.) W 64 cm (25 in.) H	117 cm (46 in.) L 79 cm (31 in.) W 61 cm (24 in.) H	173 cm (68 in.) L 137 cm (54 in.) W 71 cm (28 in.) H
Weight in air:	35 kg (78 lb)	72 kg (160 lb)	186 kg (410 lb)
Shipping weight:	110 kg (243 lb)	162 kg (357 lb)	356 kg (783 lb)
Tow cable requirements:	3 shielded twisted wire pairs	3 shielded twisted wire pairs	3 shielded twisted wire pairs
Depth rating:	300 m (984 ft) max	300 m (984 ft) max	300 m (984 ft) max

a. Vertical resolution is the smallest distinguishable distance between the peaks of two reflections that can be displayed on the screen as separate reflectors. Sound energy is reflected back to the sonar system when the transmitted pulse encounters a change in density. The resolution of a sonar system is measured by its ability to distinguish between two adjacent targets. The vertical resolution is dependent on the transmitted chirp pulse bandwidth. It is theoretically calculated by the product of the transmitted pulse length (inverse of the bandwidth) and half the speed of sound in water (approximately 750 m/s). For example, a full bandwidth pulse from an SB-424 Tow Vehicle has a vertical resolution of 3.75 cm ($1/20,000 \times 750$).